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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,455	02/24/2004	Roger A. Grey	01-2619A	8580

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EXAMINER	
JOHNSON, EDWARD M	

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/785,455	GREY ET AL.	
	Examiner	Art Unit	
	Edward M. Johnson	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grey '204 in view of Schindler '756.

Applicant claims a method of regenerating a used noble metal-containing titanium zeolite catalyst comprising the steps of heating the used catalyst at a temperature of at least 250 C in the presence of a gas stream comprised of oxygen to obtain a heated product, and reducing the heated product at a temperature of at least 20 C in the presence of a gas stream comprised of hydrogen to form a reactivated catalyst; wherein the noble metal-containing titanium zeolite catalyst was used to catalyze the epoxidation of an olefin with hydrogen and oxygen in the presence of at least one reaction solvent and at least one buffer.

Grey discloses a liquid-phase process for epoxidizing an olefin with hydrogen and oxygen in the presence of a catalyst mixture comprising a titanium zeolite and a supported catalyst comprising palladium. The process is highly selective and productive for transforming olefins to epoxides in the liquid-phase reaction of an olefin, hydrogen, and oxygen (see abstract). Grey continues to disclose wherein the catalyst may be thermally treated with hydrogen, as well as oxygen at a temperature from about 50-550 C (col. 3, lines 38-41). Grey also teaches a reaction solvent and a buffer. The solvents include water and aliphatic alcohols, and buffers, such as phosphate and borate (col. 3, line 59 - col. 4, line 22).

Schindler et al. teaches a catalyst comprised of mixtures of titanium oxides, as well as silicon oxides along with a noble metal, such as palladium (col. 4, lines 1-24). Schindler et al. continues to teach wherein the catalyst may be regenerated by passing an oxygen-containing gas through the catalyst, and then ' treating the catalyst with a hydrogen gas, while the entire regeneration process is carried out at a temperature from 300-800 C (col. 2, lines 22-46).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Grey, by first treating a used catalyst comprised of titanium, silicon, and a

noble metal, such as palladium, with an oxygen gas and then a secondary treatment with hydrogen gas at a temperature of at least 250 C and 20 C respectively, because Schindler et al. continues to teach wherein a catalyst comprised of mixtures of titanium oxides, as well as silicon oxides along with a noble metal, such as palladium may be regenerated by passing an oxygen-containing gas through the catalyst, and then treating the catalyst with a hydrogen gas, while the entire regeneration process is carried out at a temperature from 300-800 C. Such modification would have been obvious to one of ordinary skill in the art, because one of ordinary skill in the art would have expected a process for treating a catalyst comprised of a titanium zeolite with a noble metal, as taught by Schindler et al. to have been similarly useful and applicable to a process for using a catalyst comprised of a titanium zeolite and a supported catalyst comprising palladium as taught by Grey.

Grey continues to disclose wherein the catalyst is contacted with a solvent prior to regeneration (col. 3, lines 59 - 61).

Schindler et al. continues to teach wherein the catalyst may be comprised of a titanium silicate along with either both platinum and/or palladium (col. 4, lines 1-14), with respect to claims 8, 9, 17, and 18.

With respect to claims 10 and 15, it would have been obvious to heat the used catalyst at a temperature of at least 250 C, because Schindler teaches heating the catalyst at a temperature from 300-800OC, wherein the initial treatment is comprised of flushing with an inert gas, therefore the catalyst is heated in the absence of oxygen.

Response to Arguments

3. Applicant's arguments filed 11/25/05 have been fully considered but they are not persuasive.

It is argued that Grey discloses a liquid phase process... presence of a buffer. This is not persuasive because Applicant appears to admit that the catalyst of Grey is "used" in the process, which would eventually deactivate the catalyst and require regeneration. Also, catalyst regeneration is taught in Schindler. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further, Applicant does not claim a noble metal incorporated by "impregnation" as distinguished from the "mixture" of the cited prior art. It is noted that the features upon which applicant relies (i.e., a noble metal incorporated by "impregnation" as distinguished from the

"mixture" of the cited prior art) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

It is argued that in sum, Grey teaches does not teach Applicants'… a catalyst mixture. This is not persuasive a "mixture" of zeolite and noble metal does in fact "contain" noble metal.

It is argued that the dehydrogenation catalyst of Shindler… on a support. This is not persuasive because Grey teaches a zeolite. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

It is argued that in fact, Schindler would not suggest to one… containing zeolitic catalyst. This is not persuasive because Grey teaches a zeolite. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

It is argued that the §103 analysis thus fails under both factors described above. This is not persuasive for the reasons above.

It is argued that the §103 analysis also fails the second factor described above. This is not persuasive because Grey teaches a zeolite and it would have been obvious to one of ordinary skill in the art to modify the teachings of Grey, by first treating a used catalyst comprised of titanium, silicon, and a noble metal, such as palladium, with an oxygen gas and then a secondary treatment with hydrogen gas at a temperature of at least 250 C and 20 C respectively, because Schindler et al. continues to teach wherein a catalyst comprised of mixtures of titanium oxides, as well as silicon oxides along with a noble metal, such as palladium may be regenerated by passing an oxygen-containing gas through the catalyst, and then treating the catalyst with a hydrogen gas, while the entire regeneration process is carried out at a temperature from 300-800 C.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS

of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edward M. Johnson
Primary Examiner
Art Unit 1754

EMJ